

**Abstract of the Disclosure**

An exhaust gas containing a perfluoride component (PFC) and  $\text{SiF}_4$  is conducted into a silicon remover and brought into contact with water. A reaction water supplied from a water supplying piping and air supplied from an air supplying piping are mixed with the exhaust gas exhausted from the silicon remover. The exhaust gas containing water, air, and  $\text{CF}_4$  is heated at  $700^\circ\text{C}$  by a heater. The exhaust gas containing PFC is conducted to a catalyst layer filled with an alumina group catalyst. The PFC is decomposed to HF and  $\text{CO}_2$  at a high temperature exhausted from the catalyst layer is cooled in a cooling apparatus. Subsequently, the exhaust gas is conducted to an acidic gas removing apparatus to remove HF. In this way, the silicon component is removed from the exhaust gas before introducing the exhaust gas into the catalyst layer. Therefore, the surface of the catalyst can be utilized effectively, and the decomposition reaction of the perfluoride compound can be improved.